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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	
	)	
Amendment of Parts 5, 21, 22, 23, 25, 73, 74, 78, 80, 87, 90, 94, 95 and 97 of the Rules to Establish a Radio Astronomy Communications Zone in Puerto Rico	)	**RM-8165**

TO: The Chief, Policy and Rules Division

COMMENTS

Come now Radio Aeropuerto, Inc., licensee of WRAI(AM) and WLDI-FM, San Juan/Bayamon; WAEL, Inc., licensee of WAEL-AM/FM, Mayaguez/Maricao; Abacoa Radio Corp., licensee of WMIA(AM), Arecibo; and South Puerto Rico Broadcasting Corp., licensee of WISO, Ponce; all Puerto Rico, ("Stations"), through their joint counsel, and tender these, their Comments on that Petition for Rule Making filed on or about November 30, 1992 by Cornell University ("Cornell" or "Petitioner").

Petitioner seeks to have the Commission rewrite some 14 parts of its rules, in order (1) to provide for written notification to the Radio Astronomy Observatory operated by Cornell University near Arecibo, Puerto Rico, so that the observatory may determine whether applications of any and all radio broadcast facilities throughout Puerto Rico might cause harmful interference to it, and if so, to permit it to file objections with the Commission; and (2) to require notification to and prior approval by Cornell prior to

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temporary short-term operation of an auxiliary broadcast station under Part 74 of the Commission's rules, anywhere in Puerto Rico.

Stations are concerned (as indeed should all radio facilities throughout Puerto Rico) that the open-ended requirements and authority sought by Cornell could impose an unreasonable reporting burden upon each of them, and could ultimately result in protracted, unnecessary, and expensive interference analysis proceedings before the Commission. The rules now require that changes in stations' facilities as well as applications for new stations be carried in public notices daily issued by the Commission. These notices are available to Cornell and the public at large. The Petition has failed to demonstrate that they constitute an inadequate notice of any new applications or changes of radio facilities in Puerto Rico. Additionally, existing Commission files contain adequate information as to location of all radio stations in Puerto Rico, their frequency, power, and in the case of AM stations, whether they operate daytime or full time.

As Cornell has pointed out, there are now:

> . . .117 radio stations, 34 full-service television stations and 8 LPTV stations in operation or authorized to operate in Puerto Rico. In addition, there are uncounted numbers of broadcast auxiliary and experimental stations, satellite earth stations, domestic public and private fixed and mobile radio stations, aviation stations and amateur stations to name a few. (Pet. p.2)

Thus, Cornell recognizes these as an existing background of potential interference. The Arecibo Observatory is located approximately 17 kilometers south of Arecibo, a city which includes 4 AM stations and 2 FM stations, including WCMN-FM, 50 kilowatts.

The first of these commenced operation in 1947. Notwithstanding these nearby Arecibo stations and despite the "uncounted numbers" of other radio stations, Cornell elected to establish its Observatory in northwestern Puerto Rico. The situation is analogous to the amorality of new residents moving to the vicinity of an airport and then seeking prohibition of needed airport expansion or proposing curtailment of existing flights. Stations do not deny the interest and intrigue of space exploration by radio astronomy and the possible future practical application of information gained, but it remains difficult for Stations to understand how despite a 50 kilowatt FM station in its backyard, that all radio stations however distant and however minor their proposed changes may be, need be inflicted with the onerous burden of reporting to Cornell and paving the way for possible ill-considered or frivolous objections to the Commission.

Cornell has failed to demonstrate in its petition why it chose Puerto Rico for the establishment of its Observatory in what it regards as a hot-bed of potential radio interference. There may be good and valid reasons for establishment of the Observatory near Arecibo rather than elsewhere in the Caribbean, in South America or even in the remoter portions of the United States, but Cornell's petition has failed to justify that a move of the Observatory to a quieter location might not be a wise alternative to attempting to continue operation in electronically congested Puerto Rico. Indeed, Cornell knew (or should have known) that Puerto Rico was replete with potential radio interference of all types and on many

frequencies, when it elected to locate its Observatory at Arecibo. Too, it knew or should have known that the radio and television business (along with other sources of potential interference) is an expanding industry and likely to grow in numbers and radiated power.

Nor has Cornell revealed more than speculation as to whether any changes in existing radio facilities in Puerto Rico are likely to cause interference to its astronomical observations. A significant number of bands allocated by the Commission for radio astronomy, space operation and meteorological aids, for deep space research, and for space research are located above the 400-406 MHz band and Cornell concedes that:

> A major feature of the present upgrading program is to reduce this sidelobe level still further. Direct line of sight access to the receiving feeds will be eliminated at frequencies above 300 MHz by enclosing the new feed system and its subreflectors in a 83-foot diameter shielded enclosure. The enclosure entrance "pupil" accepts cosmic radiation reflected upward from the primary mirror, but is hidden from most of the incoming interference. Once line of sight access is eliminated, the scattering properties of the telescope support structure provide the only access for interfering signals. Research is being directed to ways of reducing this scattering and diffraction process. (Pet. p. 5)

Obviously Cornell is not unduly concerned with possible interference to frequencies above 300 MHz. In its Petition, Cornell does not demonstrate how much - if any - of its research is being conducted at frequencies below 300 MHz. In the absence of such demonstration, the restrictions urged by its petition are unsubstantiated by any need for relief.

Nor has the blanket need for restrictions (and subsequent objections) been demonstrated from the standpoint of harmonic interference. Stations operate in the standard broadcast band and the FM band. Which harmonics or their magnitude could cause interference to the operations of Cornell has not been revealed. Certainly the Observatory should be required to demonstrate that any harmonic interference is not "down in the grass" of radiation from a thousand other sources, arising as a result of radio communication or otherwise.

Cornell contends that its Observatory "enjoys very little natural shielding from radiation sources". In comments filed herein by the Society of Broadcast Engineers ("SBE"), terrain profiles between Arecibo and several Puerto Rican cities, including Fajardo, Guayama, Mayaguez and Ponce, demonstrate the mountainous Puerto Rican terrain serving as natural shielding between radio stations in those areas and the Cornell Observatory. There are of course other radio stations, in other Puerto Rican locations, but the terrain profiles enumerated at least show that the all-inclusive requirements sought by Cornell are overly ambitious.

Cornell's proposal that prior to a Puerto Rico broadcaster operating under Section 74.24 of the Commission's rules, it must notify Cornell and obtain specific approval for commencing short-term operation as a temporary auxiliary broadcast station. This island-wide requirement is unnecessary and unnecessarily restrictive. The extremely low power of such remote pickup, etc. applications, 1 to 10 watts, renders the likelihood of any

interference to Cornell remote, outside the immediate area of the Observatory. The Table Mountain Radio Receiving Zone, Boulder, Colorado, an area of less than 10 kilometers, suffices for astronomical observations at that site. Cornell has produced no showing that a similar restriction would not be satisfactory for Arecibo. Stations are agreeable to observing the requests of Cornell within a similar area in Puerto Rico but the requirement for notification (and veto power by Cornell) throughout the island is eminently unreasonable. Remote pickup units and similar short-term auxiliary station operations are frequently operated in emergencies and other unannounced situations. The need to notify Cornell and await its approval could well undermine the use of auxiliary facilities throughout Puerto Rico. Stations are agreeable to cooperation with Cornell where a need exists for cooperation but the likelihood of interference from mini-powered auxiliary units located up to 40 miles from Arecibo has not been demonstrated.

Additionally, since short-term auxiliary operations are frequently required upon short notice and at odd hours during the day or night, Cornell has revealed no plans to provide approval or exercise its proposed veto power on a 24-hour basis.

Conclusion

Cornell has failed to provide any element of need for the proposed restrictions that it now urges upon the Commission. The information now sought by the notification requirement is adequately available through Commission releases and trade press

proposals for station changes, particularly for broadcast operations. Requiring that stations notify Cornell prior to making any changes is but the camel's nose in the tent; the next proposal will be submission of applications to Cornell for approval prior to filing with the Commission. Until and unless Cornell can submit to the Commission valid and defensible engineering showings regarding the probability of interference, the Commission should back-burner the Cornell requests.

In particular, the proposed requirement that short-term operation of a temporary broadcast auxiliary station, anywhere on the island of Puerto Rico, must be the subject of notification to Cornell and must await its approval, is contrary to the public interest. Stations recognize the intriguing operation of the Cornell facility at Arecibo but, like the super-collider at Waxahachie, Texas, there is a limit to the degree to which it may infringe on the rights and prerogatives of other users of the radio frequency spectrum, or in the case of the super-collider, the expenditure of public funds for esoteric research.

The Commission should, in cooperation with other government agencies, establish a limited quiet zone about the Cornell facility

in Arecibo, but otherwise should refrain from indulging Cornell in its proposed widespread infringement upon the operation of other electronic media.

Respectfully submitted,

SOUTH PUERTO RICO BROADCASTING CORPORATION

WAEL, INC.

ABACOA RADIO CORPORATION

RADIO AEROPUERTO, INC.

By 
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February 18, 1993

CERTIFICATE OF SERVICE

I, Margaret A. Ford, Office Manager of the law firm of Booth, Freret & Imlay, do certify that copies of the foregoing COMMENTS were mailed via U. S. Mail, postage prepaid, first class, this 18th day of February 1993, to the offices of the following:

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